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FAUNISTIC NOTE

Ophiusa tirhaca (Lepidoptera, Erebidae) in the Romanian fauna

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Abstract

The palaeotropical-subtropical moth *Ophiusa tirhaca* (Cramer, 1777) (Lepidoptera: Erebidae) has been known in Romania based on a single (undated) specimen collected in Iași (north-eastern Romania), at least 55–60 years ago. As a consequence, this species has either been excluded or regarded as data deficient in various checklists of Romanian Lepidoptera. Here we present the first fully documented record of *O. tirhaca* from Romania. A single specimen was found in August 2022 on the Black Sea coast, east of Agigea town (Marine Dunes from Agigea nature reserve), caught by a mist net. Since this thermophilous species cannot become established in the climatic conditions of Romania, the specimen is most likely an immigrant, although it might also represent an accidental arrival due to the close proximity of Constanța harbour (virtually bordering the collection site). The occurrence of *O. tirhaca* in south-eastern Romania underlines the importance of the western Black Sea coast as a corridor for migratory or expansive species, adding to an increasing series of recent Lepidoptera reports such as *Grammodes bifasciata* (Petagna, 1787), *Acontia candefacta* (Hübner, 1831), *Dysgonia rogenhoferi* (Bohatsch, 1880), *Thysanoplusia orichalcea* (Fabricius, 1775), *Utetheisa pulchella* (Linnaeus, 1758).

Keywords

Black Sea coast, dispersal, immigrant species, mist net, moth.

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Ophiusa tirhaca (Cramer, 1777) is a palaeotropical-subtropical moth species with very few occurrences in the central and northern parts of Europe, where it is vagrant. In Romania, the species has been known based on a single specimen, which to the best of our knowledge, has never been published as a detailed faunistic note. Instead, the specimen (a female) was mentioned as being labelled only with "Iași" in the catalogue of the collection "Alexei Alexinschi" stored at Bukovina's National Museum, Suceava (Nemeș and Voicu 1973). The locality likely refers to Iași city, although a county with the same name has the city as its county seat.

Popescu-Gorj (1987) did not include *O. tirhaca* in the revised checklist of Romanian macrolepidoptera. More recent synthesis works and checklists (Rákosy 1996; Rákosy et al. 2003; Rákosy and Goia 2021) cited the record of Nemeș and Voicu (1973) as the only one known from Romania. Therefore, the presence of *O. tirhaca* in the Romanian fauna has remained uncertain.

The first author has been investigating the entomofauna of the Marine Dunes from Agigea nature reserve for over four years. During the daytime, specimens were usually captured using insect nets, but mist nets, installed for bird monitoring, were also regularly inspected for the presence of insects.

Material examined

Ophiusa tirhaca. ROMANIA (1♂): Constanța county: Marine Dunes from Agigea nature reserve; 44.0876°N/28.6422°E, 10 m a.s.l., 24 August 2022, Leg. Alexandru-Mihai Pintilioaie (Fig. 1). The specimen is deposited in the personal collection of the first author. The specimen was found alive at 21:00, in one of the mist nets installed on the territory of the reserve for bird monitoring.

In the European Lepidoptera fauna, *O. tirhaca* is a large (wing span 5–8 cm) and colourful moth that cannot be confused with any other species. In the southern regions of the continent, *O. tirhaca* has at least two generations and is on wing from March to October (Goater et al. 2003), while further north specimens are usually found during summer and autumn. The species can reproduce in various types of subtropical and tropical habitats and in the Mediterranean region it is relatively common in areas such as evergreen forests and garrigues (Wagner 2024).

The larvae are polyphagous, feeding on species belonging to various genera such as *Pistacia*, *Rhus*, *Cistus*, *Daphne*, *Viburnum*, *Erica*, *Osyris* etc. (Goater et al. 2003; Kravchenko et al. 2007). *Cotinus coggygria*, a shrub that also occurs in Romanian Dobrogea, has been reported as larval food plant as well (Hacker 2001). The larvae of *O. tirhaca* are known to occasionally cause severe damage to leaves of pistachio trees (Berlinger et al. 2001). The species is attracted by artificial light, as well as by various sugar baits (Goater et al. 2003; Tanyeri et al. 2011).

Ophiusa tirhaca is widely distributed in tropical and subtropical regions of Africa, Asia and Australia. In Europe, it is relatively widespread in the Mediterranean region (where it can be native), but becomes a very rare occurrence (vagrant specimens) towards temperate areas of the continent (Hacker 2001; Goater et al. 2003).

Among countries bordering Romania, *O. tirhaca* has been reported from Bulgaria and Ukraine, in a very small number of specimens. The first record from Bulgaria dates back to 1915, when two larvae were found in the botanical garden of Sofia, on the ornamental plant *Cistus creticus* (=*villosus*) introduced from southern France. The second record also originates from Sofia (9 July 1973), while the third comes from Troyanska Stara Planina Mountains (11 July 1994, 1400 m, one forewing found) (Beshkov 2000). After the year 2000, all records originate from south-western Bulgaria: three sites in Struma Valley (Kresna Gorge, Kalimantzi village and Kozhuh Hill) (Zlatkov and Beshkov 2008). To the best of our knowledge, the most recent record from Bulgaria is from 11 October 2023, when a male was captured at Stara Kresna quarry (leg. István Juhász). From Ukraine, *O. tirhaca* has first been recorded in 1900: a male and a female were found in Hristovka, Cherkasy region (28 June 1900, 29 August 1900) (Klyuchko et al. 2001; Klyuchko 2006). Two, more recent, additional findings originate from southern Crimea: Cape Fiolent, 15 July 2003 (Suchkov and Turbanov 2007) and Cape Lucullus, 22 September 2015 (molbiol.ru 2015).

The presence of records from countries neighbouring Romania, especially from Ukraine, suggests that the single previously known Romanian record from Iași is plausible, despite the incomplete labelling (Nemeș and Voicu 1973) (Fig. 2). The Marine Dunes from Agigea (Fig. 3), the location of the current record of *O. tirhaca*, is a nature reserve of botanical interest and is part of the Natura 2000 network (ROSCI0073, 11.8 hectares). It represents the last surviving area with preserved marine dunes from the Romanian Black Sea Coast, harbouring a series of rare

Figure 1. *Ophiusa tirhaca* from Marine Dunes from Agigea, Romania (24 August 2022). Scale bar is 10 mm.

Figure 2. Records of *Ophiusa tirhaca* in Romania. White square, incompletely labelled specimen from Iași (Iași county); black dot, year 2022 record from the Marine Dunes from Agigea (Constanța county).

Figure 3. Marine Dunes from Agigea (Constanța county, Romania), the observation site for *Ophiusa tirhaca*. Photo: V. Dincă.

plant species and a fauna mostly representative of dry steppes. The research station "Staţiunea Biologică Marină Prof. Dr. Ioan Borcea" lies in the immediate vicinity of the marine dunes. Among other research activities going on in the area, bird monitoring using mist nets also has the potential to provide some data on insects, in particular larger Lepidoptera, such as the specimen of *O. tirhaca* reported here, but also other species such as *Acherontia atropos* (Linnaeus, 1758), *Agrius convolvuli* (Linnaeus, 1758) etc.

Thermophilous *O. tirhaca* cannot become established in the climatic conditions of Romania. Therefore, the specimen reported here is most likely an immigrant. However, due to the close proximity of Constanța harbour (virtually bordering the collection site) (Fig. 3), the possibility of an accidental arrival cannot be completely discarded. The authors were not able to personally search for the specimen of *O. tirhaca* reported from the collection "Alexei Alexinschi" stored at Bukovina's National Museum, Suceava (Nemeș and Voicu 1973). However, staff from the museum informed us that the specimen could not be found in the collection.

The capture of *O. tirhaca* at the Marine Dunes from Agigea reaffirms the role of the western Black Sea coast as a likely migration corridor for a series of southern and/or expansive species. Other examples recorded from the Romanian Black Sea coast area during the last 10–15 years include species such as *Grammodes bifasciata* (Petagna, 1787), *Acontia candefacta* (Hübner, [1831]) (Rákosy and Mihai 2011; Székely 2012), *Dysgonia rogenhoferi* (Bohatsch, 1880) (Csukás et al. 2020), *Thysanoplusia orichalcea* (Fabricius, 1775) (Székely and Dincă 2020), *Utetheisa pulchella* (Linnaeus, 1758) (Olteanu 2023). Beyond the Romanian coast, it is worth mentioning *Pandesma robusta* (Walker, [1858]), a tropical migratory species having its northermost record from Cape Kaliakra in Bulgaria (Beshkov 2010).

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